

Notice of Allowability

Application No.

09/904,313

Examiner

Thien D. Tran

Applicant(s)

CARVEY, PHILIP P.

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/13/2005.
2. ☒ The allowed claim(s) is/are 2,3,6-9,14-22,10-13, 23, 24 renumbered as 1-21 respectively.
3. ☒ The drawings filed on 07/12/2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20050818</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>07/12/01</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Lyudmila Lubashev on 08/17/2005.

The specification has been amended as follows:

Claim 4 (canceled),

Claim 5 (canceled),

Claim 23, line 4, after "fabric links" change "forming an" to become ---forming a Gamma graph---,

Claim 24, line 4, after "fabric links" change "forming an" to become ---forming a Gamma graph---.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

Regarding claims 2 and 23, the prior arts fail to teach or fairly suggest a router coupled to a plurality of external links transporting data packets to and from the router, the router comprising:

the a plurality of fabric routers, one or more external links coupled to each fabric router, the plurality of fabric routers interconnected by fabric links forming a Gamma graph (defined on pages 8 and 9) interconnection network has having a diameter (D) and a radix (Δ), the radix greater than the diameter;

the interconnection network being link fault tolerant by providing $\Delta-1$ alternative paths between any two external links, packets alternatively routed between external links over one of the $\Delta-1$ paths through the interconnection network having a hop distance greater than the diameter, in combination with other limitations as specified in the independent claims 2 and 23.

Regarding claims 3 and 24, the prior arts fail to teach or fairly suggest router coupled to a plurality of external links transporting data packets to and from the router, the router comprising:

a plurality of fabric routers, one or more external links coupled to each fabric router the plurality of fabric routers interconnected by fabric links forming a Gamma graph interconnection network, wherein each fabric router is interconnected to a subset of adjacent fabric routers, each fabric router having a bidirectional interconnection with one of the adjacent fabric routers with the remaining interconnections being primarily unidirectional, in combination with other limitation as specified in the independent claims 3 and 24.

Regarding claim 7, the prior arts fail to teach or fairly suggest router coupled to a plurality of external links transporting data packets to and from the router, the router comprising:

a plurality of fabric routers, one or more external links coupled to each fabric router, the plurality of fabric routers interconnected by fabric links forming a Gamma graph interconnection network; and packets routed between external links by traversing one or more hops across the fabric links, wherein each fabric router comprises:

a switch coupled to switches of adjacent fabric routers by fabric links fanning in and out of the switch according to a set of Gamma graph adjacency rules, the switch forwarding at least portions of data packets to the at least one traffic manager or to switches of adjacent fabric routers, in combination with other limitations as specified in the independent claim 7.

Conclusion

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

Patent Examiner

Thien Tran

DUCHO
PRIMARY EXAMINER

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8-19-05